

FIG. 1

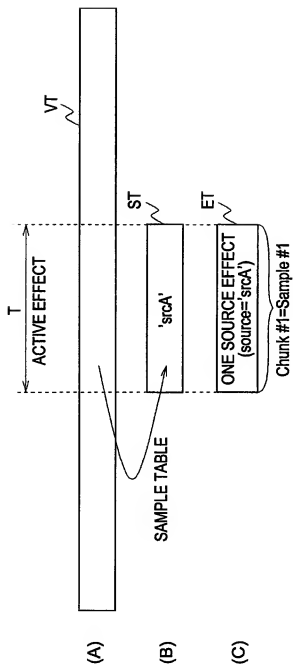


FIG. 2

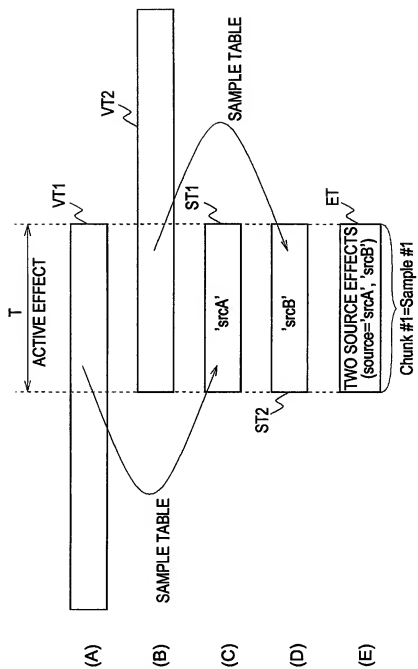


FIG. 3

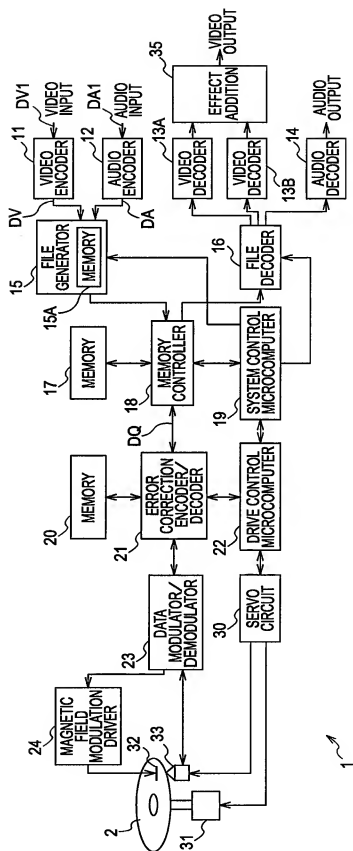


FIG. 4

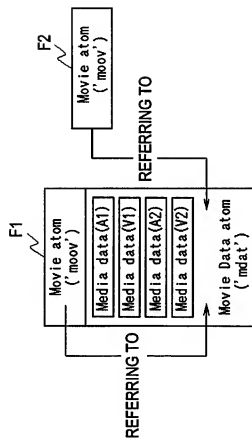


FIG. 5

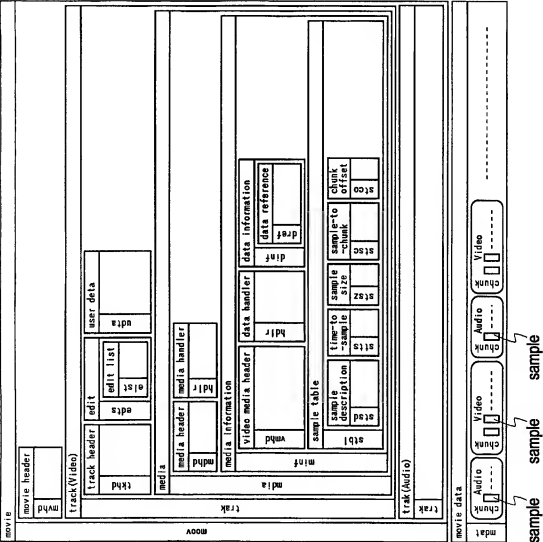


FIG. 6

ATOM	TYPE NAME
Movie atom {	'moov'
Movie Header atom	'mvhd'
Track atom (video) {	'trak'
Track Header atom	'tkhd'
Edit atom {	'edts'
Edit List atom	'elst'
}	
Media atom {	'mdia'
Media Header atom	'mdhd'
Media Handler Reference atom	'hdlr'
Media Information atom {	'minf'
Video Media Information Header atom	'vmhd'
Data Handler Reference atom	'hdlr'
Data Information atom {	'dinf'
Data Reference atom	'dref'
}	
Sample Table atom {	'stbl'
Sample Description atom	'stds'
Time-to-Sample atom	'stts'
Sample Size atom	'stsz'
Sample-to-Chunk atom	'stsc'
Chunk Offset atom	'stco'
}	
}	
}	
User data atom	'udta'
}	
Track atom (effect) {	'trak'
Track Header atom	'tkhd'
Edit atom {	'edts'
Edit List atom	'elst'
}	
Track Reference atom {	'tref'
Track Reference Type atom	'srcc'
}	
Media atom {	'mdia'
Media Header atom	'mdhd'
Media Handler Reference atom	'hdlr'
Media Information atom {	'minf'
Video Media Information Header atom	'vmhd'
Data Handler Reference atom	'hdlr'
Data Information atom {	'dinf'
Data Reference atom	'dref'

FIG. 7

<pre> } Sample Table atom { Sample Description atom Time-to-Sample atom Sample Size atom Sample-to-Chunk atom Chunk Offset atom } } Track Input Map atom { QTatom container { Track Input QTatom { Input Type QTatom Data Source Type QTatom } } } } User data atom } Movie Data atom </pre>	<pre> 'stbl' 'stsd' 'stts' 'stsz' 'stsc' 'stco' 'imap' 'sean' 'in' 'ty' 'dtst' 'udta' 'mdat' </pre>
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FIG. 8

ATOM	TYPE NAME
Movie atom {	'moov'
Movie Header atom	'mvhd'
Track atom (video 1) {	'trak'
Track Header atom	'tkhd'
Edit atom {	'edts'
Edit List atom	'elst'
}	
Media atom {	'mdia'
Media Header atom	'mdhd'
Media Handler Reference atom	'hdlr'
Media Information atom {	'minf'
Video Media Information Header atom	'vmhd'
Data Handler Reference atom	'hdlr'
Data Information atom {	'dinf'
Data Reference atom	'dref'
}	
Sample Table atom {	'stbl'
Sample Description atom	'stsd'
Time-to-Sample atom	'stts'
Sample Size atom	'stsz'
Sample-to-Chunk atom	'stsc'
Chunk Offset atom	'stco'
}	
}	
}	
User data atom	'udta'
}	

FIG. 9

Track atom (video 2) {	'trak'
Track Header atom	'tkhd'
Edit atom {	'edts'
Edit List atom	'elst'
}	
Media atom {	'mdia'
Media Header atom	'mdhd'
Media Handler Reference atom	'hdlr'
Media Information atom {	'minf'
Video Media Information Header atom	'vmhd'
Data Handler Reference atom	'hdlr'
Data Information atom {	'dinf'
Data Reference atom	'dref'
}	
Sample Table atom {	'stbl'
Sample Description atom	'stsd'
Time-to-Sample atom	'stts'
Sample Size atom	'stsz'
Sample-to-Chunk atom	'stsc'
Chunk Offset atom	'stco'
}	
}	
}	
User data atom	'udta'
}	
Track atom (effect) {	'trak'
Track Header atom	'tkhd'
Edit atom {	'edts'
Edit List atom	'elst'
}	
Track Reference atom {	'tref'
Track Reference Type atom	'ssrc'
}	
Media atom {	'mdia'
Media Header atom	'mdhd'
Media Handler Reference atom	'hdlr'
Media Information atom {	'minf'
Video Media Information Header atom	'vmhd'
Data Handler Reference atom	'hdlr'
Data Information atom {	'dinf'
Data Reference atom	'dref'

FIG. 10

<pre> } Sample Table atom { Sample Description atom Time-to-Sample atom Sample Size atom Sample-to-Chunk atom Chunk Offset atom } } Track Input Map atom { QTatom container { Track Input QTatom { Input Type QTatom Data Source Type QTatom } Track Input QTatom { Input Type QTatom Data Source Type QTatom } } } } User data atom } Movie Data atom </pre>	<pre> 'stbl' 'stsd' 'stts' 'stsz' 'stsc' 'stco' 'imap' 'sean' 'in' 'ty' 'dtst' 'in' 'ty' 'dtst' 'udta' 'mdat' </pre>
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FIG. 11

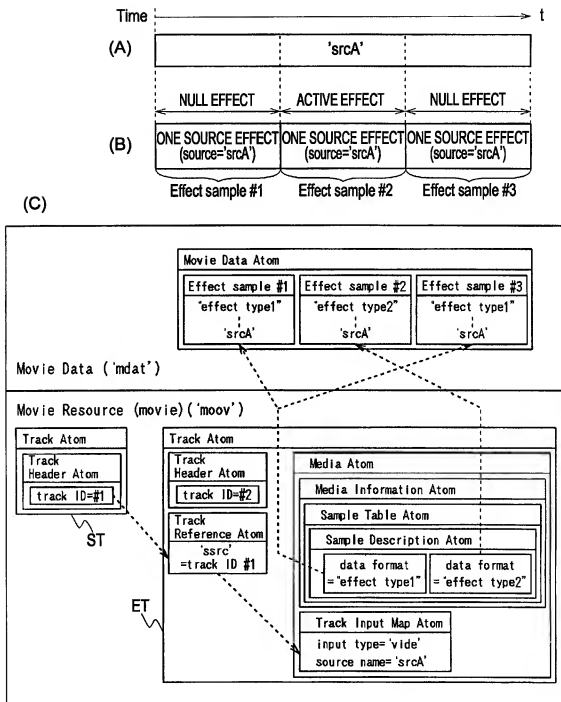


FIG. 12

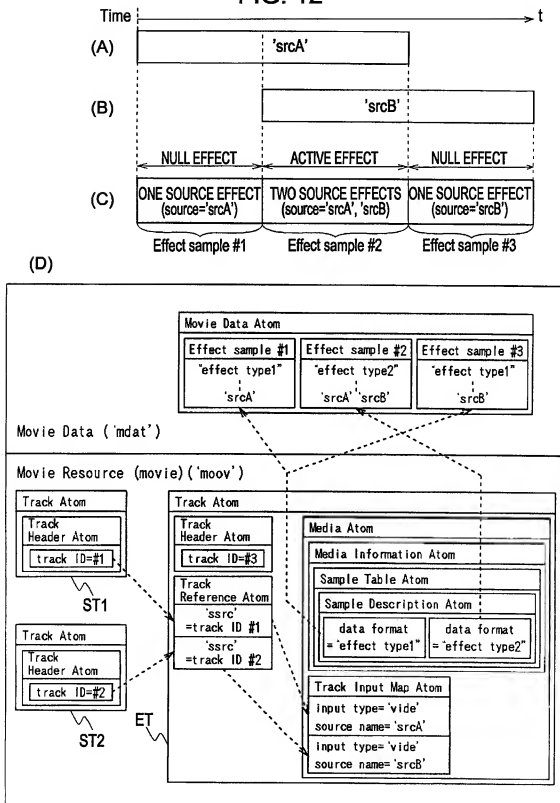


FIG. 13

```

Sample Description atom {
    (4) Size
    (4) Type(='stsd')
    (1) Version
    (3) Flags
    (4) Number of Entries
    (86) Video Sample Description entry#1
        :
    (86) Video Sample Description entry#M
}

Video Sample Description entry {
    (4) Size
    (4) Data Format
    (6) Reserved
    (2) Data Reference Index
    (2) Version
    (2) Revision Level
    (4) Vendor
    (4) Temporal Quality
    (4) Spatial Quality
    (2) Width
    (2) Height
    (4) Horizontal Resolution
    (4) Vertical Resolution
    (4) Data Size
    (2) Frame Count
    (32) Compressor Name
    (2) Depth
    (2) Color Table ID
}

```

FIG. 14

```

Sample Description atom {
    (4) Size
    (4) Type(='stsd')
    (1) Version
    (3) Flags
    (4) Number of Entries
    (112) Effect Sample Description entry#1
        :
    (112) Effect Sample Description entry#M
}

Effect Sample Description entry {
    (4) Size
    (4) Data Format
    (6) Reserved
    (2) Data Reference Index
    (2) Version
    (2) Revision Level
    (4) Vendor
    (4) Temporal Quality
    (4) Spatial Quality
    (2) Width
    (2) Height
    (4) Horizontal Resolution
    (4) Vertical Resolution
    (4) Data Size
    (2) Frame Count
    (32) Compressor Name
    (2) Depth
    (2) Color Table ID
/* Data Format extension atom */
    (26) Stream Descriptor atom
}

```

FIG. 15

TYPE NAME	EFFECT NAME
'blur'	BLUR
'solr'	COLOR STYLE
'tint'	COLOR TINT
'edge'	EDGE DETECTION
'embs'	EMBOSS
'hslb'	HSL COLOR BALANCE
'rgbb'	RGB COLOR BALANCE
'shrp'	SHARPNESS
'YPST'	POSTERIZATION
'MOSA'	MOSAIC
'NEGA'	RGB REVERSE (NEGATIVE)
'brco'	BRIGHTNESS AND CONTRAST
'ckey'	CHROMAKEY
'dslv'	CROSS FADE
'push'	PUSH
'slid'	SLIDE
'RDOT'	RANDOM DOT
'blnd'	ALPHA BLENDING
'zoom'	ZOOM
'smp1'	SMPTE WIPE
'smp2'	SMPTE IRIS
'smp3'	SMPTE RADIAL
'smp4'	SMPTE MATRIX
'UDEF'	USER DEFINED EFFECT

FIG. 16

```

Stream Descriptor atom {
  (4) Size
  (4) Type(='strd')
  (1) Version
  (3) Flags
  /* Data Format specific data */
  (4) Data Format
  (4) User Defined Effect Type
  (2) Parameter Flag

```

FIG. 17

```

User Defined Effect Type {
  (2) Owner ID
  (2) Effect ID
}

```

FIG. 18

Bit	FLAG NAME	VALUE	DESCRIPTION
15:1	reserved	0	
0	Effect presentation effectiveness	1	EFFECT OF CORRESPONDING EFFECT SAMPLE ENTRY IS ENABLED (ACTIVE EFFECT)
		0	EFFECT OF CORRESPONDING EFFECT SAMPLE ENTRY IS DISABLED (ACTIVE EFFECT)

FIG. 19

EFFECT NAME (TYPE NAME)	PARAMETER	TYPE NAME
Blur filter ('blur')	Amount of blurring	'ksiz'
Color Style ('solr')	Solarize amount	'solr'
	Solarize point	'solp'
	Posterize amount	'post'
Color Tint filter ('tint')	Tint	'tint'
	Dark color	'back'
	Light color	'fore'
	Brightness	'brig'
	Contrast	'cont'
	Amount	'amnt'
Edge Detection filter ('edge')	Edge thickness	'ksiz'
	Colorize	'colz'
Emboss filter ('embs')	Amount of embossing	'ksiz'
HSL Balance filter ('hslb')	Hue multiplier	'hmul'
	Saturation multiplier	'smul'
	Lightness multiplier	'vmul'
RGB Balance filter ('rgbb')	Red multiplier	'rmul'
	Green multiplier	'gmul'
	Blue multiplier	'bmul'
Sharpen filter ('shrp')	Amount of sharpening	'ksiz'
Posterization ('YPST')	Y-bit adjustment	'YBIT'
Mosaic ('MOSA')	Horizontal size	'MHSZ'
	Vertical size	'MVSZ'
	Amount	'amnt'
RGB Reverse ('NEGA')	none	none
Brightness and Contrast ('brco')	Brightness	'bryt'
	Contrast	'cntr'
SMPTE Wipe effects ('smp't')	Percentage	'pcnt'
	Wipe ID	'wpID'
	Soft border	'soft'
	Border width	'widt'
	Border color	'bclr'
	Horizontal repeat	'hori'
	Vertical repeat	'vert'

FIG. 20

SMPTE Iris effects ('smp2')	Percentage Wipe ID Soft border Border width Border color Horizontal repeat Vertical repeat	'pcnt' 'wpID' 'soft' 'widt' 'bclr' 'hori' 'vert'
SMPTE Radial effects ('smp3')	Percentage Wipe ID Soft border Border width Border color Horizontal repeat Vertical repeat	'pcnt' 'wpID' 'soft' 'widt' 'bclr' 'hori' 'vert'
SMPTE Matrix effects ('smp4')	Percentage Wipe ID Soft border Border width Border color Horizontal repeat Vertical repeat	'pcnt' 'wpID' 'soft' 'widt' 'bclr' 'hori' 'vert'
Chroma Key ('ckey')	Key color	'keyc'
Cross Fade ('dslv')	Percentage	'pcnt'
Push ('push')	Percentage From direction	'pcnt' 'from'
Slide ('slid')	Percentage Slide angle	'pcnt' 'angl'
Random Dot ('RDOT')	Horizontal size Vertical size Percentage	'DHSZ' 'DVSZ' 'pcnt'
Alpha Compositor ('blind')	Blend mode	'bMod'
Zoom ('zoom')	Percentage Centre X Centre Y Zoom variation Zoom distance	'pcnt' 'xcnt' 'ycnt' 'zvar' 'zdst'

FIG. 21

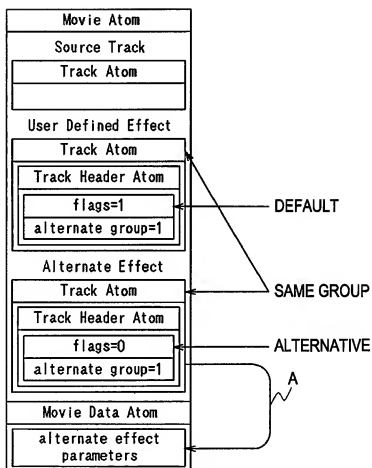


FIG. 22

Syntax	No. of bits
Track Header Atom {	
Size	32
Type = 'tkhd'	32
Version	8
Flags	24
Creation Time	32
Modification Time	32
Track ID	32
Reserved = 0	32
Duration	32
Reserved = 0	32*2
Layer	16
Alternate Group	16
Volume	16
Reserved = 0	16
Matrix Structure	32*9
Track Width	32
Track Height	32
}	

FIG. 23

Syntax	No. of bits
User Data Atom {	
Size	32
Type = 'udta'	32
/*user_data list*/	
UD AV Descriptor Atom	
}	

FIG. 24

Syntax	No. of bits
UD AV Descriptor Atom {	
Size	32
Type = 'mqds'	32
Track Property Atom	
}	

FIG. 25

Syntax	No. of bits
Track Property Atom {	
Size	32
Type = 'tkpt'	32
Version	8
Flags	24
Presentation Type	32
Priority	32
}	

FIG. 26

Value	Description
'orig'	Original Track
'efct'	Effect Track

FIG. 27

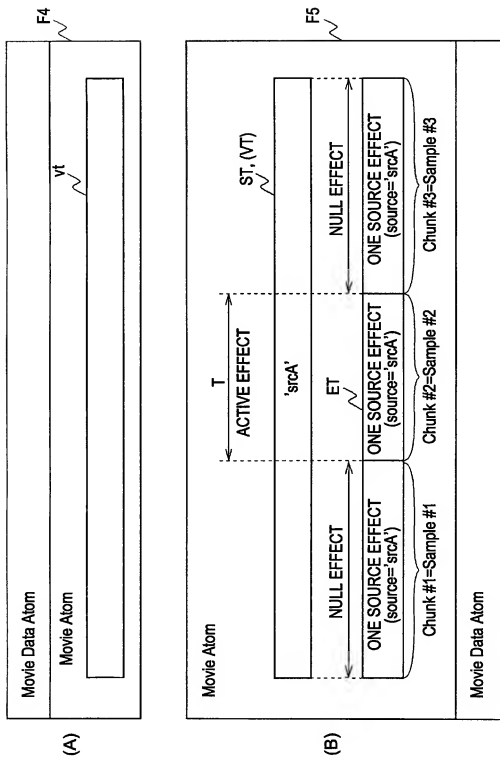


FIG. 28

F6

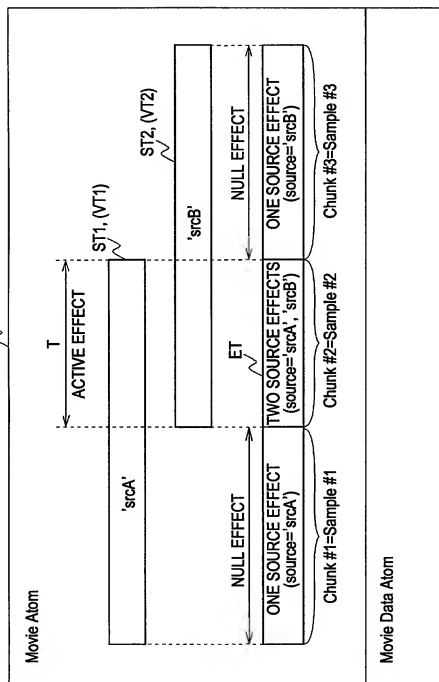


FIG. 29

(B)

TRACK	Header Atom			User Data Atom	
	Flags	Alternate Group	Layer	Presentation Type	Priority
ST	1	0	0	orig	1
ET	1	1	1	efct	2
AT1	0	1	1	efct	3
AT2	0	1	1	efct	4

(A)

ST(scrA)

			ET
MOSA	NULL EFFECT	tint	AT1
blur	NULL EFFECT	tint	AT2

FIG. 30

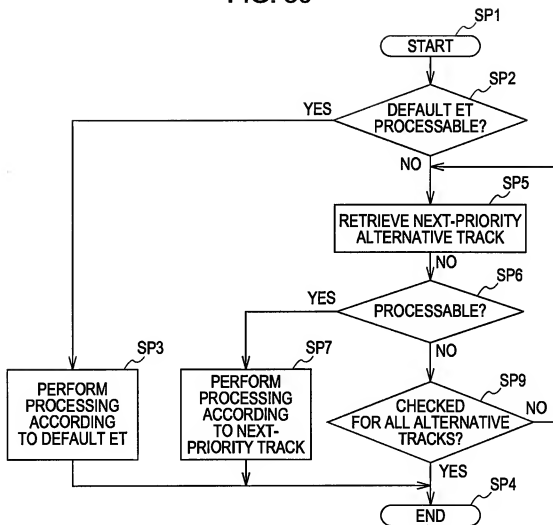
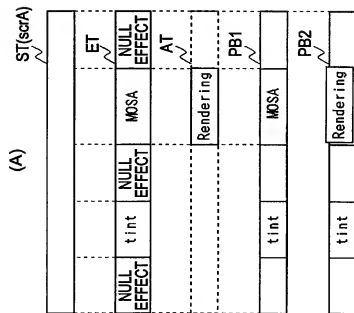


FIG. 31



(B)

TRACK	Header Atom		User Data Atom	
	Flags	Alternate Group	Layer	Presentation Type
ST	1	0	0	orig
ET	1	1	-1	efct
AT	1	0	-2	efct
				3

FIG. 32

(B)

TRACK	Header Atom		User Data Atom	
	Flags	Alternate Group	Presentation Type	Priority
ST1	1	0	orig	1
ET	1	1	efct	2
AT1	0	1	efct	3
ST2	1	0	orig	1
AT2	0	1	efct	4
AT3	0	1	efct	5

